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EXAMINER

SHINGLES, KRISTIE D

ART UNIT PAPER NUMBER

2141

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/872,920

Applicant(s)

CHANDRA ET AL

Examiner

Kristie Shingles

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1 - 43 are pending.

RESPONSE TO AMENDMENTS

1. Claims 1-3, 5, 7-9, 28-30, 32, 34-36 have been amended. Claim 43 is new added.

CONTINUED EXAMINATION UNDER 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 7/20/2006 has been entered.

RESPONSE TO ARGUMENTS

3. Applicant's arguments with respect to claims 1, 7, 12, 16, 20, 24, 28, 34 and 39 have been considered but are moot in view of the new ground(s) of rejection.

35 USC § 112

4. **Regarding Claims 1-11 and 28-38:** the corrections made to the claim language are accepted by the Examiner. The rejections under 35 U.S.C. 112, first paragraph, are therefore withdrawn.

CLAIM OBJECTIONS

5. **Regarding Claims 3, 7 and 34:** the corrected claim language is accepted by the Examiner. The objections are hereby withdrawn.

CLAIM REJECTIONS - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. **Claims 1, 2, 4-6, 16-29, 31-33 and 39-43** are rejected under 35 U.S.C. 102(b) as being anticipated by *Fuchs et al* (USPN 5,440,726).

a. **Regarding claims 1 and 28,** *Fuchs et al* teach a computer implemented method and machine-readable medium comprising:

- receiving by a second network process a first set of data from a first network process (col.7 lines 20-50);
- determining death of the first network process (col.7 lines 56-60);
- clearing the first set of data by the second network process if a time period expires (col.8 lines 29-57, col.24 lines 33-43, col.27 lines 65-68); and
- synchronizing by the second network process, the first set of data with a second set of data if the time period does not expire, the second set of data received from the first network process after the first network process restarts (col.10 line 14-col.11 line 18, col.25 lines 35-65).

b. **Regarding claim 16,** *Fuchs et al* teach a network element comprising:

- a first processor to execute a first and second network process, the first network process to generate a first set of data before restarting and a second set of data

after restarting, the second network process to synchronize for itself the first and second set of data (col.10 lines 15-20);

- the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting upon determining a time period has not expired, the time period beginning when the first network process dies (col.11 lines 22-66, col.13 line 38-col.14 line 47); and
- a second processor coupled to the first processor, the second processor to process a set of traffic using the first set of data before the first network process restarts and a third set of data after the first network process restarts (col.10 line 14-col.11 line 18).

c. **Claims 20 and 24** contain limitations that are substantially similar to claim 16 and are therefore rejected under the same basis.

d. **Claims 39 and 43** contain limitations that are substantially similar to claims 1 and 16 and are therefore rejected under the same basis.

c. **Regarding claims 2, 27 and 29**, *Fuchs et al* teach the computer-implemented method of claim 1, further comprising indicating the first set of data as stale when the network process is determined to be dead (col.9 line 11-col.11 line 18).

d. **Regarding claims 4 and 31**, *Fuchs et al* teach the computer implemented method of claim 1, wherein the first set of data and the second set of data are synchronized after a done signal is received (col.10 line 14-col.11 line 18, col.25 lines 35-65).

e. **Regarding claims 5 and 32**, *Fuchs et al* teach the computer implemented method of claim 1, further comprising restoring a set of configurations to the network process after the first network process restarts (Abstract, col.9 line 11-col.12 line 18).

f. **Regarding claims 6 and 33**, *Fuchs et al* teach the computer-implemented method of claim 1, wherein further comprising clearing the second set of data if the time period expires and a done signal is not received (col.8 lines 29-57, col.24 lines 33-43, col.27 lines 65-68).

g. **Regarding claim 17**, *Fuchs et al* teach the network element of claim 16, wherein the first processor comprises a memory to store the first, second and third set of data (col.13 lines 53-58, col.14 lines 48-53).

h. **Regarding claim 18**, *Fuchs et al* teach the network element of claim 16, further comprising the first processor to allocate a first memory to the first network process and a second memory to the second network process (col.13 lines 53-58, col.14 lines 48-53).

i. **Regarding claim 19**, *Fuchs et al* teach the network element of claim 16, further comprising the first processor to allocate a first memory to the first network process, a second memory to the second network process, and a third memory to store the first set of data, the second set of data, and the third set of data (col.13 lines 53-58, col.14 lines 48-53).

j. **Regarding claim 21**, *Fuchs et al* teach the network element of claim 20, the element wherein the first memory, the second memory and the third memory are main memory (col.13 lines 53-58, col.14 lines 48-53).

k. **Regarding claim 22**, *Fuchs et al* teach the network element of claim 20, wherein the first memory, the second memory, and the third memory are mass storage (col.13 lines 53-58, col.14 lines 48-53).

l. **Regarding claim 23**, *Fuchs et al* teach the network element of claim 20, wherein the first memory, the second memory, and the third memory are a set of regions of a memory (col.13 lines 53-58, col.14 lines 48-53).

m. **Regarding claim 25**, *Fuchs et al* teach the network element of claim 24, wherein the second network element comprises: a first memory to store the first set of data and the

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synchronized set of data; and a second memory to store the second set of data (col.13 lines 53-58, col.14 lines 48-53).

n. **Regarding claims 26 and 42**, *Fuchs et al* teach the system of claims 24 and 39 further comprising the second network element to clear the first and second set of data if a time period expires (col.8 lines 29-57, col.24 lines 33-43, col.27 lines 65-68, col.28 lines 34-44).

o. **Regarding claim 40**, *Fuchs et al* teach the method of claim 39, wherein the timer is initialized upon receipt of the death notification (col.11 lines 47-53).

p. **Regarding claim 41**, *Fuchs et al* teach the method of claim 40, wherein the death notification is based on an absence of a heartbeat from the second network process (col.11 lines 44-66).

CLAIM REJECTIONS - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 3, 7-11, 30 and 34-38** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Engel et al* (USPN 6,681,389) in view of *Damani et al* (USPN 5,938,775).

q. **Regarding claims 7 and 34**, *Engel et al* teach a computer implemented method, network element and machine-readable medium comprising:

- detecting death of a first network process (col.2 lines 10-12);
- restarting the first network process (col.5 lines 36-39, col.6 lines 4-21, col.9 line 62-col.10 line 3); and

- restoring a set of configurations to the first network process (col.2 lines 12-17, col.6 lines 13-16).

Engel et al fail teach to explicitly teach if a first set of data is generated by the first network process before a time period expires, then synchronizing by the second network process the first set of data with a second set of data, the second set of data having been generated by the first network process before the death of the first network process and if the time period expires, then clearing the second set of data by the second network process. However, *Damani et al* teach rollback-synchronization among the processes wherein the inter-process communication (orphaned) data if the time period expires (col.3 lines 32-40, col.6 lines 44-59, col.7 lines 9-34, col.9 lines 11-13, col.9 line 54-col.10 line 14).

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the restart and rollback system of *Engel et al* with *Damani et al*'s fault tolerant IPC message passing system wherein then the second set of data is cleared if the time period expires, because this data is invalid and this prevents the system from processing invalid data because which may corrupt the system and compromise the integrity of the processes.

r. **Regarding claims 9 and 36**, *Engel et al* with *Damani et al* teach the computer implemented method of claims 7 and 34, *Damani et al* further teach the method further comprising wherein expiration of the time period is determined with a timer maintained after the network process is determined to be dead (col.2 lines 35-54).

s. **Claims 3 and 30** are substantially similar to claims 9 and 36 and are therefore rejected under the same basis.

t. **Regarding claims 11 and 38,** *Engel et al* with *Damani et al* teach the computer implemented method of claims 7 and 34, *Damani et al* further teach the method wherein further comprising clearing the second set of data if the time period expires and a done signal is not received (col.3 lines 33-40).

u. **Regarding claims 8 and 35,** *Engel et al* with *Damani et al* teach the computer implemented method of claims 7 and 34, *Damani et al* further teach the method teaches indicating the second set of data as stale when the network process is detected as dead (col.3 lines 33-40).

v. **Regarding claims 10 and 37,** *Engel et al* with *Damani et al* teach the computer implemented method of claims 7 and 34, *Damani et al* further teach the method wherein the first set of data and the second set of data are synchronized after a done signal is received (col.6 lines 1-23 and 44-66, col.7 lines 11-34).

10. **Claims 12 - 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Damani et al* (USPN 5,938,775) in view of *Kidder et al* (USPN 6,694,450).

w. **Regarding claim 12,** *Kidder et al* teach a network element comprising:

- a cross connect control module to host a first and second network process, the first network process to generate a first set of data after restarting and the second network process to synchronize for itself the first set of data with a second set of data generated by the first network process before restarting (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42, line 66-col.43 line 12); and
- a traffic card coupled to the cross connect module, the traffic card to process a set of traffic with the synchronized first and second set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42, line 66-col.43 line 12).

Kidder et al fail to explicitly teach the second network process to synchronize the first set of data with a second set of data generated by the first network process before restarting

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upon determining a time period has not expired, the time period beginning when the first network process dies. However, *Damani et al* teach rollback-synchronization among the processes wherein the inter-process communication (orphaned) data if the time period expires (col.3 lines 32-40, col.6 lines 44-59, col.7 lines 9-34, col.9 lines 11-13, col.9 line 54-col.10 line 14). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the restart and rollback system of *Kidder et al* with *Damani et al*'s fault tolerant IPC message passing system wherein then the second set of data is cleared if the time period expires, because this data is invalid and this prevents the system from processing invalid data because which may corrupt the system and compromise the integrity of the processes.

x. **Regarding claim 13,** *Kidder et al* with *Damani et al* teach the network element of claim 12, *Kidder et al* further teach the element wherein the cross connect module comprises a first and second memory to host the first and second network process (col.3 lines 42-52, col.3 line 63-col.4 line 6).

y. **Regarding claim 14,** *Kidder et al* with *Damani et al* teach the network element of claim 12, *Kidder et al* further teach the element wherein the traffic card comprises a set of processors to process the first and second set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6).

z. **Regarding claim 15,** *Kidder et al* with *Damani et al* teach the network element of claim 12, *Kidder et al* further teach the element wherein the cross connect module comprises: a first memory to host the first network process; a second memory coupled to the first memory, the second memory to host the second network process; and a third memory coupled to the first and

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second memory, the third memory to store the first set of data, second set of data, and the synchronized set of data (col.3 lines 42-52, col.3 line 63-col.4 line 6, col.42 line 66-col.43 line 12).

CONCLUSION


11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Shirakihara et al (5,923,832), McAllister et al (6,876,625), Brittain et al (6,684,396), Kanulainen (5,838,659), Zhou et al (6,178,522), Huang (5,748,882), Chung et al (6,044,475), Meth et al (6,401,216), Bartfai et al (6,012,150).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kristie Shingles
Examiner
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RUPAL DHARIA
SUPERVISORY PATENT EXAMINER